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(202) 358-1600

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Remarks by The Honorable Frederick Gregory
NASA Deputy Administrator
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Kennedy Space Center Visitor's Complex
Cape Canaveral, Florida

Thank you Jim (Jim Banke, Senior Producer Space.com) for that very gracious introduction and for presenting that most flattering video.

You know seeing that brief film got me thinking for some reason about a photo display we had last year at NASA headquarters highlighting our agency's collaboration with such space movies as Apollo 13, Armageddon, and of course Space Cowboys, which as many of you know features the tremendous acting talents of KSC's own Lisa Malone.

Well, just for the record, let me state without equivocation that my being selected for the astronaut corps had absolutely nothing to do with the script of Space Cowboys.

After all, I'd like to think that I'm more handsome than Clint Eastwood, more daring than Tommy Lee Jones, and without question, more romantic than Donald Sutherland.

Well at any rate, I am delighted to be back here at the Kennedy Space Center and to share with you this night of fellowship and celebration. I'd certainly like to extend my greetings to Congressman Dave Weldon, who is a tremendous friend of the space program, and to Sue Hinnant from the staff of another strong space program supporter, Congressman Tom Feeney.

I'd like to start out by observing that the good people with the Space Club who organized this event had exquisite timing in making Adrian Laffitte the recipient of this year's Kurt Debus award.

What Adrian and the entire Lockheed-Martin team have done to help improve our Nation's expendable launch capabilities is truly remarkable.

Last night, with the successful Atlas Three launch of Asiasat, you helped to remind us all that despite our recent setbacks, the exploration and development of space will move forward, and that in this second century of flight, we will extend the reach of human civilization far into the cosmos.

Tonight, I wish to talk about the future that people like Adrian Laffitte are helping to bring about.

In the grand scheme of things, one hundred years is a very short period of time. But in that time, we have gone from the shores of Kitty Hawk and from this port to Tranquility Base and beyond.

In a few weeks, we will continue to expand our exploration horizons with the launch of the first of two Mars Rover spacecraft.

This Thursday, our Mars exploration experts met in Washington to decide the landing sites for the rovers and provisionally pinpointed two promising spots: Gusev Crater and Meridiani Planum. Both sites show powerful evidence of past liquid water, but in very different ways. Gusev Crater has a large who in the ground with a dry riverbed going right into it, suggesting the presence of an ancient lake. And Meridiani has the chemical signature of past liquid water.

As was the case with the Mars Pathfinder mission six years ago, when these rovers get to our neighboring planet next year, they will carry on an incredible investigation of the surface that millions back here on Earth can follow in real time via television and the internet over a 90 day period.

The Mars Rover missions, of course, have been many years in the planning. Now, with the recent publication of NASA's new Strategic Plan, it gives me great pleasure to tell you that we have developed a roadmap for a very ambitious 21st century of spaceflight.

Building on the foundation of our ongoing capabilities and activities the Strategic Plan sets out how we intend to achieve our mission goals of understanding and protecting the home planet, exploring the Universe and searching for life and inspiring the next generation of explorers.

We will do so by building a true highway to space in the years ahead, one that I promise will be quite scenic, won't have tollbooths nor roadside advertising signs.

Our Strategic Plan, which was developed with the help of many of you good people down here at Kennedy, envisions an expanding human and robotic presence throughout the solar system as we develop new capabilities and our knowledge base on a step-by-step basis.

Further, as we follow this plan in the years ahead, we will be able to reach any number of destinations, do important science at those destinations, and also advance economic and technological progress back home.

Specifically, our planners have focused on missions that will use gravitationally balanced points in the Sun-Earth system, to enable explorers to reach out to the Moon, asteroids, Mars, the moons of Jupiter, and to allow for the construction and servicing of huge next generation space telescopes that will be capable of viewing Earthlike planets orbiting nearby stars.

Using these gravitationally balanced areas or libration points as demarcation points, just as the Louis and Clark expedition used St. Louis to set off on their voyage of discovery 200 years ago, we plan to go ever outward, with sophisticated robots like the Mars rovers enhancing what our human explorers set out to do.

Significantly, the future we are planning is driven by our most profound scientific questions. Questions such as: How did the universe, galaxies, stars, and planets form and evolve? How can exploration of the universe and our solar system revolutionize our understanding of physics, chemistry, and biology? What will the future climate of Earth be like? Are there Earth-like planets beyond our solar system? Does life in any form, however simple or complex, carbon-based or otherwise, exist elsewhere than on planet Earth?

In this future we are planning, if there is a compelling scientific interest, we will go anywhere we can in the solar system, to get these questions answered.

And when we do go this time back to the moon and on to Mars with human explorers, you can rest assured that we will not just be planting flags and footsteps and coming home. We'll be going to stay.

Let me assure you of one other thing. This is not just a visionary dream that is not grounded in reality. We have identified a number of critical tasks or building blocks that we will develop in the near term to ensure that several bold scientific goals are achievable in the future.

I'd like to now mention three building blocks that will lead to dramatic transformations in the way we conduct our work in space.

First, we are using our crews onboard the International Space Station and ground research to look at how we can address the long-term health issues of crews exposed to radiation in space.

This research will look at potential alternatives to active or passive shielding for future missions, and whether or not artificial gravity is needed for deep space exploration missions.

Further, we intend to learn from the experience of astronauts and explorers of remote Earth sites such as Antarctica, to help our future explorers cope with the challenging physiological and psycho-social aspects of long-term missions.

We also intend to use the Space Station as a technology proving ground where astronauts can learn how to construct and maintain large scientific platforms with the help of robots.

Now as I speak, our Expedition Six crew onboard the International Space Station, astronauts Ken Bowersox and Don Petit, and cosmonaut Nikolai Budarin, are continuing their research and station upkeep work, as they await the Soyuz flight later this month of the replacement crew members Ed Lu and Yuri Malenchenko. Later this month, I intend to travel to Khazakstan to witness the Soyuz launch and to wish Ed and Yuri a safe trip up to the Space Station.

Our second building block for the future is an advanced laser optics communications system. Following in the same progression that led from Telegraph to Telephone, our Optical Communications initiative will use laser light instead of radio waves to revolutionize the way our spacecraft gather and report back information.

Today, using conventional radio frequency communications, the Mars Reconnaissance Orbiter will take 21 months to map 20 percent of the red planet's surface. By contrast, optical communications will allow the entire surface to be mapped in four months. We're going to prove this new technology on a mission slated six years from now.

Another mission in the planning stages involves breakthrough nuclear propulsion technology, our third building block for the future.

Currently, by using conventional propulsion, it takes years for our spacecraft to get to the outer planets, and once they approach their destinations, they can only do rewarding science for a few months with the best imaging available for a few weeks.

Using nuclear and other advanced propulsion systems such as a plasma bubble pushed by the solar wind, we believe we can do much better.

Nuclear propulsion will enable exploration missions that are inconceivable with current conventional chemical propulsion. Missions can, for the first time, be redirected to take advantage of circumstances as they unfold, just as Meriwether Lewis and William Clark redirected their voyage two centuries ago when it became clear there was no single water passage to the Pacific Ocean.

Our first planned nuclear fission mission is Project Prometheus. This mission, planned for early in the next decade, will allow us to send a spacecraft on a tour of Jupiter's icy moons, which astrobiologists believe could harbor organic material.

We also believe the pursuit of nuclear and other advanced propulsion technologies will open the door to other power generation and propulsion technologies that may make feasible even faster accomplishment of our space exploration missions.

In all these ways, we will build technological capabilities today that will open up untold avenues of scientific inquiry and keep this spaceport facility very busy in the century ahead. You can count on it.

So to sum up, despite the challenges we face, we're confident that our mission goals will help guide the efforts of our extraordinary team of scientists and engineers to push the technological envelope today, so that with the help of many of the people in this room, we can achieve dramatic feats of exploration and scientific discovery tomorrow. And in so doing, we will provide the American public and the people of the world with tangible and lasting benefits. In so doing, we will honor the legacy of our courageous Columbia astronauts, and the spirit of exploration that motivates all of you. Thank you very much for being such a good audience and for all that you do for our country.